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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,636	09/12/2003	Hiroshi Ishii	242005US-3	9300
22850	7590	10/08/2004	EXAMINER CHEN, SOPHIA S	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ART UNIT 2852	PAPER NUMBER

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,636

Applicant(s)

ISHII ET AL.

Examiner

Sophia S. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-15 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 12 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/12/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/12/03, 12/12/03, 2/5/04, 6/29/04, 7/16/04, 7/29/04, 8/16/04, and 9/2/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 367a (Figure 11) and 260B (Figure 13). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- a. Page 17, line 26, "67A" should be "67a".
 - b. Page 21, line 16, "61 K" should be "61K".
 - c. Page 23, line 8, "61 K" should be "61K".

d. Page 24, line 11, "61 K" should be "61K".

e. Page 25, line 10, "61 K" should be "61K".

Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 11 and 16 are objected to because of the following informalities:

a. Claim 11, line 2, "1, wherein the waste toner transporter" should be either "10, wherein the waste toner transporter" or "1, wherein a waste toner transporter" to have the proper antecedent basis.

b. Claim 16, line 2, "the waste toner transporter" should be "a waste toner transporter" to have the proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 11 (if it depends on claim 1), and 21 are rejected under 35

U.S.C. 102(e) as being anticipated by Sameshima et al. (US Pat. No. 6,493,528 B2).

7. The patent discloses a waste toner collecting device comprising: a container 16 which is detachably set in an image forming apparatus A and contains therein a waste toner produced in the image forming apparatus A and which has such a shape as to fit into a free space of the image forming apparatus A (column 4, lines 44-48; column 9, lines 15-20; Figures 8 and 9); a waste toner transport device 35 which transports the waste toner in the container 12 (column 10, lines 23-28); one of surfaces of the container 16 is opposed to a surface of a member (a cleaning blade 6 or an intermediate transfer belt 5a) of the image forming apparatus A (Figure 9); a waste toner transporter 35 is configured to transport the waste toner in such a direction that the waste toner is distanced from one or more openings 34 (column 10, lines 23-25); and the image forming apparatus A comprising an image bearing member 1, a cleaning device (containing the cleaning blade 6 and a screw 28) configured to collect a residual toner present on the image bearing member 1 (Figure 9), and the waste toner collecting device 16.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3-6, 8, 10, 13-15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sameshima et al. in view of Honobe et al. (JP 2002-148884).

Sameshima et al., as discussed above, further discloses the one of surfaces of the container 16 is slanted (Figure 9); the opening 34 which is connected with the cleaning unit via at least one waste toner feeding passage (screw) 28 of the image forming apparatus A (Figures 9 and 10); the opening 34 is located at a highest position of the container 16 (Figure 9); the opening 34 is arranged on a side surface of the container 16 (Figure 10); a driving device configured to drive the waste toner transporter 35 (column 10, lines 25-28); the waste toner transport device includes plural waste toner transporters (screws) 35 in the container 16 (Figure 9); the at least one waste toner transporter 35 is located below the opening 34 (Figure 9); and the waste toner container 16 comprises a waste toner containing portion therein, which does not have a

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slanted surface (Figure 9; the area nearby the roller 40). Sameshima et al. further discloses the residual toner remaining on the intermediate transfer belt 5a is charged and is collected on the drum 1 and is scraped off by the cleaning blade 6 (column 5, lines 27-32).

Sameshima et al. differs from the instant claimed invention in not disclosing the cleaning unit which includes plural cleaners and which is slantingly arranged.

Honobe et al. discloses an image forming apparatus 1 comprising: a plurality of image bearing members (drums) 11; a plurality of drum cleaners 14; an intermediate transfer belt 20; an intermediate transfer belt cleaner 23 arranged at the end (nearby roller 22) that opposite to the transfer roller 30 (Figure 1); a waste toner container 50; and one of surfaces of the container 50 has substantially the same direction as that of the cleaners 14, 23 (Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the intermediate transfer belt cleaner of Honobe et al. in place of the intermediate transfer belt cleaning mechanism of Sameshima et al. because of the same functionality for cleaning and collecting the residual toner remained on the intermediate transfer belt.

Since the intermediate transfer belt cleaner of Honobe et al. is added to the intermediate transfer belt 5a of Sameshima et al. at the position nearby roller 41 (the end that opposite to a transfer roller 11; Figure 9), it would have been obvious to one of ordinary skill in the art that the one of surface of the container 16 (Sameshima et al.) is

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slanted in a same direction (at substantially a same angle) as that of the cleaning unit (6, 28, and the new added belt cleaner).

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sameshima et al. in view of Honobe et al. as applied to claim 10 above, and further in view of Torimaru et al. (US Pat. No. 5,617,195)

Sameshima et al. in view of Honobe et al., as discussed above, differs from the instant claimed invention in not disclosing the driving device comprising a driving motor and a drive force transmitting device.

Torimaru et al. discloses an image forming apparatus comprising a waste toner collecting device having a cleaner 34; a waste toner feeding passage 37; a waste toner container 40 having a waste toner transporter 41; a driving device 50 having a driving motor 51 and a drive force transmitting device (a driving gear) G6 configured to transmit a driving force of the motor 51 to the waste toner transporter 41 (column 7, lines 1-12 and Figures 2 and 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the motor and the drive force transmitting device as taught by Torimaru et al. in place of the driving device of Sameshima et al. in view of Honobe et al. because of the same functionality for driving the waste toner transporter.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sameshima et al. in view of Honobe et al. and further in view of Torimaru et al. as applied to claim 17 above, and further in view of Aruga et al. (US Pat. No. 5,537,191)

Sameshima et al. in view of Honobe et al. and further in view of Torimaru et al., as discussed above, differs from the instant claimed invention in not disclosing the drive transmitting device comprises either a group of gears including a spur gear or another group of gears including a bevel gear.

Aruga et al. discloses an image forming apparatus comprising a driving device having a driving gear 520 being a spur gear (column 8, lines 19-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the spur gear as taught by Aruga et al. in place of the driving gear of Sameshima et al. in view of Honobe et al. and further in view of Torimaru et al. because of the same functionality for driving the screw.

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sameshima et al. in view of Yamane et al. (US Pat. No. 6,085,052)

Sameshima et al., as discussed above, differs from the instant claimed invention in not disclosing a support member on a bottom surface of the container.

Yamane et al. discloses an image forming apparatus comprising a detachable housing containing an image bearing member 30, a residual toner transport device 71, a container 32 capable of collecting the residual toner (Figure 2), and a support member 124 on a bottom surface of the container 32 (Figure 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the support member as taught by Yamane et al. to the bottom surface of the waste toner container of Sameshima et al. so as to maintain the same orientation as when it was housed in the image forming apparatus when it is

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removed from the image forming apparatus and placed on a table (Yamane et al.; column 9, lines 51-54).

14. Claims 1-11, 13-15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasunobu et al. (JP 11-095519, cited in Form PTO-1449) in view of Shimotoso et al. (JP 2001-296712) and Sameshima et al.

Yasunobu et al. discloses an image forming apparatus 1 comprising a plurality of image bearing members 222a through 222d; a cleaning unit includes plural cleaners 226a through 226d being arranged at regular intervals (paragraph [0028] and Figure 1); a belt 216 being slantingly arranged; and the cleaning unit 226a through 226d being slanted in a same direction and at substantially a same angle as that of the belt 216 (Figure 1).

Yasunobu et al. differs from the instant claimed invention in not disclosing a waste toner collecting device and a waste toner transport device.

Shimotoso et al. discloses an image forming apparatus comprising a plurality of image bearing members 7a (Figures 1 and 2); a cleaning unit includes plural cleaners 7c being arranged at regular intervals (Figures 1 and 2); a belt 2; and the cleaning unit (cleaners) 7c being arranged in a same direction as that of the belt 2 (Figure 1).

Shimotoso et al. further discloses a waste toner collecting device comprising a container 12 has such a shape to fit into a free space of the image forming apparatus (Figures 1 and 4); one of the surfaces of the container 12 is opposed to a surface of a member (the plural cleaners 7c or the belt 2) of the image forming apparatus (Figure 1); the container 12 comprises one or more openings 12a through 12d which are

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connected with the cleaning unit 12a through 12d via at least one waste toner feeding passage (screw) 7d of the image forming apparatus (Figure 4); the openings 12a through 12d are arranged at regular intervals (Figures 4 and 5); the openings 12a through 12d are arranged on the top surface of the container 12 (Figures 4 and 5); and one or more openings 12a through 12d have an area greater than an area of a cross section of the at least one waste toner feeding passage 7d (Figure 4).

Sameshima et al. discloses a waste toner collecting device comprising a container 16; a waste toner transport device includes plural waste toner transporters (screws) 35 in the container 16 (Figure 9); a driving device configured to drive the waste toner transporter 35 (column 10, lines 25-28); the waste toner transporter 35 is configured to transport the waste toner in such a direction that the waste toner is distanced from the one or more openings 34 (column 10, lines 23-25); and the waste toner transporter 35 is located below the one or more openings 34 (Figure 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the waste toner container (with openings) and its location of Shimotoso et al. to the cleaning unit of Yasunobu et al. to easily remove the waste toner contained in the container (remove at once instead of the traditional way that required to remove the waste toner from each cleaner individually.)

By combining Yasunobu et al. and Shimotoso et al., it would have been obvious that the container is slanted in a same direction and at substantially a same angle as that the of cleaning unit (or belt), at least one of the one or more openings (associated with the cleaner 226d of Yasunobu et al.) is located at a highest position of the

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container, and the one or more openings are arranged on the slanted surface (top surface) of the container.

Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the toner transport device as taught by Sameshima et al. to the container of Yasunobu et al. and Shimotoso et al. to flatten the waste toner accumulated in the container in order to store waste toner evenly (Sameshima et al., column 10, lines 23-25).

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasunobu et al. in view of Shimotoso et al. and Sameshima et al. as applied to claim 10 above, and further in view of Torimaru et al.

Yasunobu et al. in view of Shimotoso et al. and Sameshima et al., as discussed above, differs from the instant claimed invention in not disclosing the driving device comprising a driving motor and a drive force transmitting device.

Torimaru et al. discloses an image forming apparatus comprising a waste toner collecting device having a cleaner 34; a waste toner feeding passage 37; a waste toner container 40 having a waste toner transporter 41; a driving device 50 having a driving motor 51 and a drive force transmitting device (a driving gear) G6 configured to transmit a driving force of the motor 51 to the waste toner transporter 41 (column 7, lines 1-12 and Figures 2 and 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the motor and the drive force transmitting device as taught by Torimaru et al. in place of the driving device of Yasunobu et al. in view of Shimotoso

et al. and Sameshima et al. because of the same functionality for driving the waste toner transporter.

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasunobu et al. in view of Shimotoso et al. and Sameshima et al. and further in view of Torimaru et al. as applied to claim 17 above, and further in view of Aruga et al.

Yasunobu et al. in view of Shimotoso et al. and Sameshima et al. and further in view of Torimaru et al., as discussed above, differs from the instant claimed invention in not disclosing the drive transmitting device comprising either a group of gears including a spur gear or another group of gears including a bevel gear.

Aruga et al. discloses an image forming apparatus comprising a driving device having a driving gear 520 being a spur gear (column 8, lines 19-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to the spur gear as taught by Aruga et al. in place of the driving gear of Yasunobu et al. in view of Shimotoso et al. and Sameshima et al. and further in view of Torimaru et al. because of the same functionality for driving the screw.

Allowable Subject Matter

17. Claims 12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ito et al. (US Pat. No. 4,323,306) discloses a rotative drive for a coil spring may be transmitted by converting an axial drive into a vertical drive through such means as a bevel gear on the forward end of the screw shaft of the cleaner, another bevel gear and spur gears.

Haneda et al. (US Pat. No. 5,065,195) discloses a waste toner collecting device comprising a container and a waste toner transport device.

Aoki et al. (US Pat. No. 5,121,168) discloses a waste toner collecting device comprising a container.

Matsuo et al. (US Pat. No. 5,146,270) discloses a waste toner collecting device comprising a container.

Harumoto et al. (US Pat. Pub. No. US 2003/0219290 A1) discloses a waste toner collecting device comprising a container.

Tokimatsu et al. (JP 08-328366) discloses an image forming apparatus comprising a plurality of cleaners and a waste toner collecting device.

Kimura et al. (JP 11-003015) discloses a waste toner collecting device comprising a container.


Shimotoso et al. (JP 2002-006574) discloses a waste toner collecting device comprising collecting tray, a container, and a vibration source for vibrating the container.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (703) 308-1373. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
October 4, 2004